In the Claims

Please amend the claims as follows:

1-17 (canceled).

18. (new) A method for predicting success/failure of a final product being processed along a manufacturing line, the method comprising:

processing a subassembly of the final product at different processing stages along the manufacturing line;

obtaining current process data during at least one processing stage that is before assembly of the final product, the current process data including one of a measurement and a test performed on the subassembly at the at least one processing stage;

obtaining historical process data from prior subassemblies being processed along the same manufacturing line as the subassembly, the historical process data being from the prior subassemblies while at the at least one processing stage; and

predicting, using both the historical process data and the current process data, success/failure of the subassembly if the subassembly is assembled to the final product, wherein predicting occurs before assembly of the final product.

19. (new) The method of claim 18 further comprising:

determining actual success/failure for the prior subassemblies after being assembled to final products at an end of the manufacturing line, and including data from the success/failure for the prior subassemblies in the historical process data.

20. (new) The method of claim 18 wherein predicting, using both the historical process data and the current process data, success/failure further comprises:

generating a prediction of success or failure for the subassembly; and

comparing the prediction to a threshold value.

21. (new) The method of claim 18 wherein predicting, using both the historical process data and the current process data, success/failure further comprises:

generating a prediction of success of failure for the subassembly; and

comparing the prediction to previous actual successes or failures for the prior subassemblies that were assembled to final products.

22. (new) The method of claim 18 further comprising:

predicting a failure for the subassembly before the subassembly is assembled into the final product; and

completing assembly, along the manufacturing line, of the subassembly into the final product even after predicting the failure for the subassembly.

23. (new) The method of claim 22 further comprising:

testing the final product to determine actual success or failure;

comparing the actual success or failure with the prediction of the failure; and

modifying the step of predicting success/failure of the subassembly based on results from the step of comparing the actual success or failure with the prediction of the failure.

24. (new) The method of claim 18 further comprising:

comparing actual success or failure of the final product with the prediction of success/failure of the subassembly to evolve and improve the step of predicting success/failure of the subassembly.

25. (new) A computer-readable medium having computer-readable program code embodied therein for causing a computer to perform:

obtaining current process data on a subassembly in a manufacturing line during at least one processing stage that is before assembly of the subassembly into a final product;

obtaining historical process data from prior subassemblies processed along the same manufacturing line as the subassembly, the historical process data being from the prior subassemblies while at the at least one processing stage;

predicting, using both the historical process data and the current process data, success/failure of the subassembly if the subassembly is assembled to the final product, wherein the predicting success/failure occurs before assembly of the final product;

assembling the subassembly into the final product;

verifying actual success/failure of the final product; and

modifying performance of the predicting success/failure based on a result from the verifying actual success/failure of the final product.

26. (new) The computer-readable medium of claim 25 wherein modifying performance of the predicted success/failure further comprises comparing the actual success/failure of the final product with the prediction of success/failure.

27. (new) The computer-readable medium of claim 25 for causing the computer to further perform:

obtaining current processing data on the subassembly at each of a plurality of different processing stages in the manufacturing line; and

predicting, using both the historical process data and the current process data, success/failure of the subassembly at each of the plurality of different processing stages.

28. (new) The computer-readable medium of claim 25 for causing the computer to further perform:

predicting a failure for the subassembly before the subassembly is assembled into the final product; and

completing assembly of the subassembly into the final product even after predicting the failure for the subassembly.

29. (new) The computer-readable medium of claim 28 for causing the computer to further perform:

determining actual success or failure of the final product;

comparing the actual success or failure with the prediction of the failure; and

modifying the step of predicting success/failure of the subassembly based on results from the step of comparing the actual success or failure with the prediction of the failure.

30. (new) A method for predicting success/failure of a final product being processed along a manufacturing line, the method comprising:

processing a subassembly of the final product at different processing stages along the manufacturing line;

evaluating the subassembly at a processing stage, that is before assembly of the subassembly into the final product, to generate current process data;

sending the current process data to a predictor;

obtaining historical process data from prior subassemblies previously processed along the same manufacturing line as the subassembly, the historical process data being obtained from the prior subassemblies while at the processing stage; and

predicting, with the predictor and using both the historical process data and the current process data, success/failure of the subassembly if the subassembly is assembled to the final product, wherein predicting occurs before assembly of the final product.

31. (new) The method of claim 30 further comprising:

assembling the subassembly into the final product;

determining actual success/failure of the final product; and

modifying the predictor based on accuracy of the step of predicting success/failure.

32. (new) The method of claim 30 further comprising:

predicting failure of the subassembly;

assembling the subassembly into the final product in spite of the prediction of failure of the subassembly;

determining actual success/failure of the final product; and

modifying the predictor based on accuracy of the step of predicting success/failure.

33. (new) The method of claim 30 wherein the predictor generates a prediction and compares the prediction with a matrix of actual success/failure results from previous subassemblies evaluated at the processing stage along the same manufacturing line.